

SONY

High Definition Video System

Digital HDVS

HDCAM HDW-500

Digital



The HDW-500 Digital HD Studio VTR brings High Definition video recording to the studio and edit bay as the result of over 20 years of Sony research into HD technology. In 1981, Sony introduced the High Definition Video System (HDVS) providing film-like picture quality with conventional VTR operations. In 1984, Sony unveiled the industry's first analog HD 1-inch VTR product which was followed in 1989 by the world's first all-digital 1-inch HD VTR, the industry leading HDD-1000. Now, based on the newly developed HDCAM format, Sony is bringing advanced, cost-effective 1/2-inch tape technology to the HD market with the new HDW-500 HD Studio VTR.

The HDW-500 inherits all of the operational advantages, robustness, and compactness of the well accepted Digital BETACAM format in addition to many new HD functions, particularly its superb high definition picture quality and its convenient HD SDI interface capability to integrate with other HDVS equipment. The HDW-500 incorporates Sony's sophisticated HD digital compression and digital processing technologies, enabling a longer recording time of 124 minutes with an L cassette and 40 minutes with an S cassette. In order to easily integrate into conventional SDTV systems and enable users to upgrade smoothly to high-definition production, the HDW-500 is a dual format VTR providing both digital HDTV and SDTV outputs. Thanks to its sophisticated circuitry design, the HDW-500 maintains the same compact size as that of Digital BETACAM equipment and also retains the conventional Sony interfaces to ensure flawless communication with other SDTV video equipment. Now that the U.S. video production industry is rapidly evolving toward all-digital, Standard Definition or High Definition television, with the new HDW-500 broadcasters now have an HD studio VTR that will record, play back and edit those pristine widescreen images using ergonomic controls already familiar to most operators. The era of digital production is upon us, and the HDW-500 is leading the way.

Benefits



40min

124min

A longer recording/playback time of 124 minutes on an L cassette and 40 minutes on a S cassette.

Dual format outputs enables both HDTV and SDTV production.

The HDW-500 offers an optional 480i down converter to help support the SMPTE standard 292M.

The HDW-500 interfaces for interconnection with other HD drivers.

D-SUB 9-pin
D-SUB 15-pin
D-SUB 25-pin
D-SUB 50-pin
(option)

HDW-500
with HKDV-501 and
HKDV-506

(1125/60)
(1125/59.94)
(525/59.94)

The HDW-500 provides superb high definition picture quality with a familiar, intuitive BETACAM-style operation.

Sony's Flexicart multi-cassette system for automatic recording/playout has the same body size and cassette size as BETACAM tapes.



HD-SDI

SDI (D1/D2)

SDI

HDTV
Equipment

SDTV
Equipment

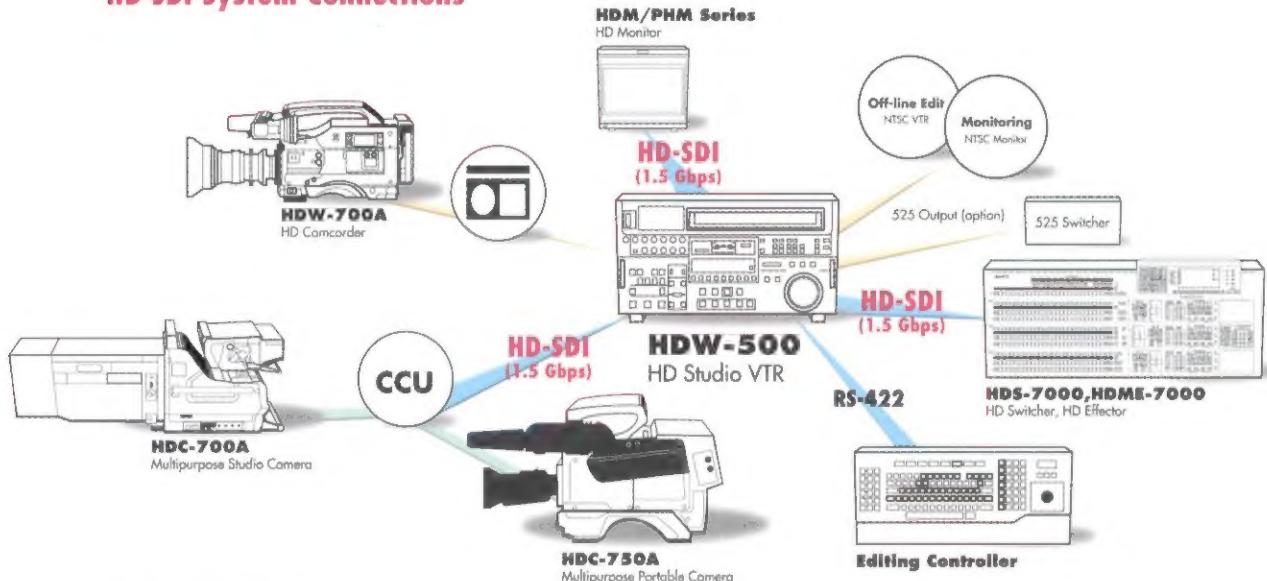
Disk Recorder
A/V Server

Features

HDCAM format

A refined tape format based on Digital BETACAM technology has been adopted for HDCAM equipment's state-of-the-art HD recording technology. Utilizing the HDCAM format's new high-density recording capability and its newly developed HD Digital Compression Technology, the HDW-500 provides superb picture quality and a long recording time 124 minutes per one L cassette and 40 minutes per one S cassette, which contributes to lower running costs.

HD-SDI System Connections



HDCAM tape

The HDCAM tape has been designed to ensure the reliable recording of the HDCAM format's recording wavelength of 0.49 um. To achieve this, Sony created new metal magnetic particles, that are half the size of those used in Digital BETACAM tape. By implementing an extremely smooth tape surface with increased density of this ultrafine magnetic particles through a new calendering technology, the HDCAM tape with a C/N (Carrier to Noise Ratio) of 45 dB has been developed to ensure high-integrity digital HD recording in the field.

Advanced control panel

The HDW-500 has incorporated as a standard an advanced control panel with built-in EL display for menu setting. A removable memory card designed to be inserted into the control panel enables up to eight sets of VTR setup parameters, each containing about 100 cue points to be stored.

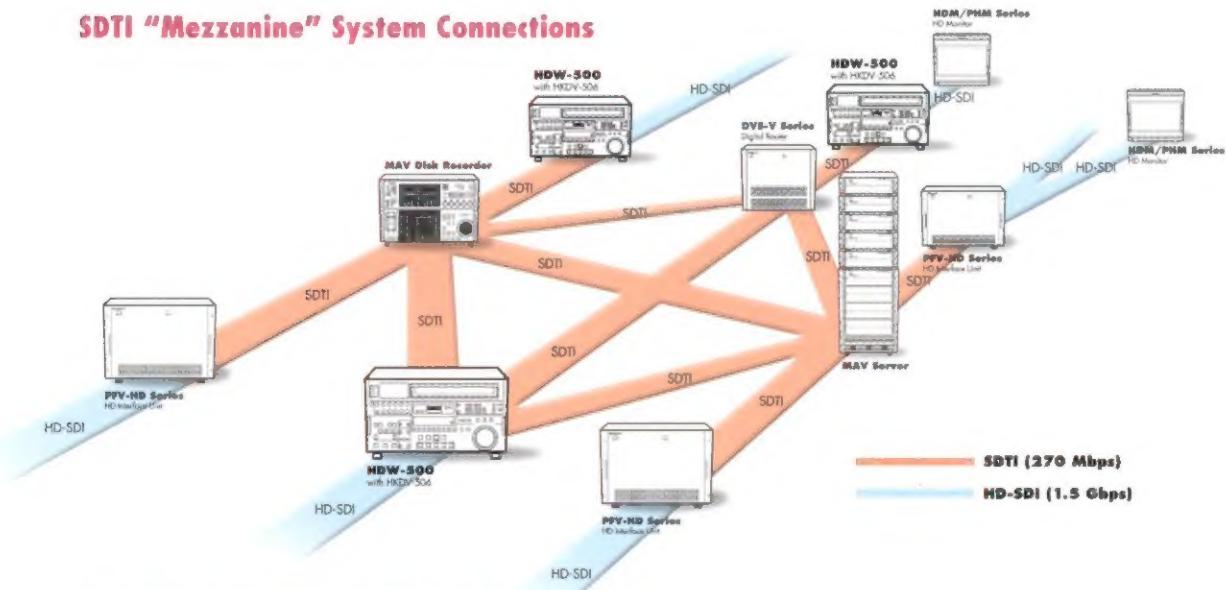
HD SDI interface

By adopting the simple and highly reliable HD SDI (High Definition Serial Digital Interface according to SMPTE 292M standard), the HDW-500 facilitates a convenient 1920 x 1080 pixel baseband digital interface with other video equipment via a single BNC cable.

Plug-in line converter board-HKDV-502

The optional HKDV-502 line converter board provides superb quality variable speed Dynamic Tracking playback and bi-directional vertical filtering between the two active line standards of 1080 (SMPTE 274M) and 1035 (SMPTE 260M/240M).

SDTI "Mezzanine" System Connections



Field frequency switchable

The HDW-500 can operate in record and/or playback at either 59.94 Hz or 60 Hz field rates, selected from the control panel. It also can be synchronized with the 525 black burst signal (59.94 Hz).

Plug-in down converter board-HKDV-501

With an optional HKDV-501 SDTV down converter board installed, the HDW-500 provides a variety of SDTV outputs in addition to HDTV outputs. The SDTV outputs include three SDI interfaces and one analog composite interface in addition to SDTV sync. The SDI outputs are either D-1 component SDI or D-2 composite SDI selectable through a menu operation from the control panel of the HDW-500.

Features

Digital video controller—HKDV-503

The output video signals can be adjusted from an optional HKDV-503 digital video controller or from the local control panel. Through this adjustment the basic video/sync parameters of HD output, SD output, and image enhancer can be set up independently.

Other advantages

HDCAM technology allows the HDW-500 to retain the same easy-handling operation while maintaining the compact size and light weight of a Digital BETACAM VTR. The HDW-500 is mountable in any standard 19-inch rack.

Optional accessories



HD-525 Down Converter Board
HKDV-501



HD Dubbing Interface Board
HKDV-504



HD Digital Video Controller
HKDV-503

HD Line Converter Board
HKDV-502



HD Editing Processor Board
HKDV-505



50-pin Parallel Remote Kit
BKDW-509



Rock Mount Kit
RMM-110

SDI Board
HKDV-506



HDCAM Video Cassette
**BCT-124HDL/64HDL/
40HD/22HD**



Video Head Cleaning Cassette
BCT-HD12CL

Remote Control Cable 9-pin/15-pin
(2m, 5m, 10m, 30m)
**RCC-1502H/1505H/
1510H/1530H**

Supplied accessories

Power cord (1)
RCC-5G 9-pin remote control cable (1)
PSW 4 x 16 screws for rack mounting (4)

IC memory card (1)
Operation manual (1)
Maintenance manual part-1 (1)

Specifications

HDW-500

(General)

Signal interface

standard:	SMPTE 292M (Uncompressed serial digital HD SDI)
Power requirements:	AC 90 V to 265 V, 43 Hz to 63 Hz
Power consumption:	230 W (w/down converter board integrated)
Operating temperature:	+5°C to +40°C (+41°F to +104°F)
Storage temperature:	-20°C to +60°C (-4°F to +140°F)
Humidity:	Less than 80% (relative humidity)
Dimensions (Approx.):	427(W) x 237(H) x 520(D) mm (16 7/8 x 9 3/8 x 20 1/2 inches)
Mass (Approx.):	35 kg (77.16 lbs)
Dynamic tracking range:	-1 to +2 times normal playback speed
Servo lock time:	1.0 sec or less
Load/unload time:	6 sec or less

(Video)

Quantization:	Input/output Interface: 10 bits
Compression format:	DCT Intra-frame 8 Bit data reduction

(Audio)

Sampling frequency:	48 kHz
Frequency response:	20 Hz to 20 kHz
Quantization:	20 bits/sample
Number of channels:	4 channels (Uncompressed)
Wow and flutter:	Below measurable limit



HDW-500 Rear panel

(Input/Output connector)

(Video)

- Input -	
Ref Sync (1125/60):	BNC (loop-through) x 1
Ref Sync (1125/59.94):	BNC (loop-through) x 1
Ref Sync (525/59.94):	BNC (loop-through) x 1
HD SDI (1.5 Gbps):	BNC x 1
Dubbing (1.5 Gbps):	BNC x 1 (with HKDV-504 installed)
Dubbing (270 Mbps)	BNC x 1 (with HKDV-506 installed)
- Output -	
Sync (1125)	BNC x 2
HD SDI (1.5 Gbps)	BNC x 4 (including one with or without character insertion)
Dubbing (1.5 Gbps)	BNC x 1
525 system (option)	BNC x 1
Sync (525)	BNC x 3 (including one with or without character insertion)
SDI (D1/D2)	BNC x 1
Analog composite:	BNC x 1 (with or without character insertion)

(Audio)

- Input -	
Digital audio (AES/EBU):	BNC x 2 (loop-through)
Analog audio:	LR x 4
Cue audio:	XLR x 1
Time code:	XLR x 1
- Output -	
Digital audio (AES/EBU):	BNC x 2
Analog audio:	XLR x 4
Cue audio:	XLR x 1
Time code:	XLR x 1
Audio monitor (L/R):	XLR x 2
Headphone:	Stereo jack

(Remote)

Control panel:	D-sub 15-pin
RS-422A in:	D-sub 9-pin
RS-422A out:	D-sub 9-pin
RS-232C:	D-sub 25-pin
Remote parallel I/O (option):	D-sub 50-pin
Video control:	D-sub 9-pin